

## ABSTRACT

A pre-compensator is provided based on a definition of a base vibration model having a motor transfer function 1 for generating motor displacement 12 from an input that is the sum of input torque and a table propelling force 10 multiplied with a reducer and Cartesian-to-polar coordinate transformation constant 14, a table transfer function 14 for multiplying a deviation 11 between an output that is the motor displacement multiplied with a reducer and polar-to-Cartesian coordinate transformation constant 2 and table displacement with a table-displacement-to-force conversion spring constant 3 to generate the table propelling force 10 and to output table displacement 7, and a base driving transfer function 5 for generating base displacement by multiplying base displacement 9 with a base-displacement-to-force conversion spring coefficient 6 and inputting the same with the table propelling force, table displacement 8 being generated from a difference between the table displacement and the base displacement.